



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/861,530	05/22/97	EVANS	17310-203587

WALTER C LINDER  
2200 NORWEST CENTER  
90 SOUTH SEVENTH STREET  
MINNEAPOLIS MN 55402-3901

LM11/0326

EXAMINER  
WOLFF, J

ART UNIT 2754	PAPER NUMBER
------------------	--------------

DATE MAILED: 03/26/98

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
**08/861,530**

Applicant(s)  
**EVANS et al**

Examiner  
**John H. Wolff**

Group Art Unit  
**2754**



☐ Responsive to communication(s) filed on \_\_\_\_\_

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-20 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-20 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit:

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
2. Update the status of the U. S. Application recited on page 2 of the application.
3. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 the limitation referring to; 'and to detect strain in the head suspension assembly.' finds no reasonable structural basis or support and is also awkwardly phrased. Claim 2 is both vague and confusing for it is not clear whether the recited; 'at least one strain transducer circuit' refers back to the; 'at least one strain transducer circuit' of claim 1 or introduces a further such circuit. The resultant ambiguity requires clarification. Claims 3-4 also 7-9 compound the above noted confusion and the indicated query is again appropriate. In claims 3 and 8 the phrase; 'and the base' lacks an adequate basis, while in claim 5 reference to; 'the read/write head' finds no positive support as 'a read/write head', in claim 1, is set forth inferentially. Claim 5 is further confusing for it is not apparent why a(ny) elastic deformation of the head suspension assembly, as for example the 'in the proximal end mounting region' will generate a strain that necessarily displaces the head attachment region from neutral, as this claim suggests. Clarification is again appropriate.

Art Unit:

Independent claim 13 appears to duplicate claim 5 and any patentable distinction in the included scope of claim 5 should be clarified. Alternatively, this claim appears to be redundant and inappropriate. The next above comments apply equally to claims 14-16, merely consider the included scope in claims 2,6 and 10, respectively.

In independent claim 17 the relationship, if any, between the 'actuator arm' and the 'load beam' should be clarified so that the 'proximate end' of the load beam gains significance along the lines of the 'distal end'. The claim as presented confuses and obscures the included structural features. Reference to the 'at least one or a first/second strain gage', in claims 19-20, further obscures any physical association of the 'actuator arm' with the balance of the included structure.

For reasons as set forth above the claims as presented are all deemed to be vague, confusing and indefinite as to their include scope as well as their actual point of novelty.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1, 5-6, 10, 13 and 15-20, are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Hatamura (5,142,424) .

Art Unit:

A review of reference Fig. 6 shows the claimed combination of a load beam (item 9), a flexure (which reads on item 10), and at least one strain transducer circuit (item 26) on a head suspension assembly (item 3). Claim 1 recites no more than that. Claims 5-6 and 10 are also taught by the '424 reference and anticipated thereby. Merely review the reference 'head attachment region' as shown in Fig. 6 and the explanation dealing therewith. Also note the included strain gage (item 26) and the conventional operation thereof.

Claim 13, 15-16 and 17-20 are substantially coextensive with the claim already commented upon, or alternatively are taught by Hatamura and stand rejected for the above indicated reasoning.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-4, 7-9, 11-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatamura (5,142,424) in view of either Hosokawa et al (5,014,145) or Tokyuama et al (5,335,126).

The principal reference '424 shows the claimed head suspension assembly but arguably does not show the recited strain transducer circuit located on the load beam. The reference does

Art Unit:


show a strain transducer circuit (item 26) to be located on the suspension assembly head arm (item 5). The supporting references each show a transducer assembly which is located on the load beam, as set forth in the claims under review. Consider reference Figs, 6 & 10 in '145 or Fig. 33 in '126.

It would have been obvious to a person having reasonable skill in this art and the applied references before him to position the transducer circuit of Hatamura on the load beam for that would provide a clear indication as to the strain encountered on that portion of the head suspension assembly. The physical positioning of a well known component, such as a strain gages, along a well known structural constituent of a typical head suspension assembly and achieve expected results, namely a measure of strain, is obvious in view of the clear teaching and reasonable suggestions which flow from the art as applied. To the extent that the claimed 'constantan' is disclosed it does not define patentably over the reference 'copper' lead.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H. Wolff whose telephone number is (703) 308-3215.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

jhw  
March 16, 1998

  
JOHN H. WOLFF  
PRIMARY EXAMINER  
GROUP 2500